

## Left Paraduodenal Hernia

Hamza Muneer, MD\* Ahmed Jawad, MD, CABS, MRCSI, FCS SA MIS\*\*  
Jassim Al-Aradi, MD\*\*\*

**Left paraduodenal hernia is a rare cause of small bowel obstruction. A sixty-five-year-old Indian male presented with a history of recurrent vomiting for a couple of days. CT scan was performed and the diagnosis was suspected but not confirmed. Laparoscopic repair was performed with uneventful postoperative course.**

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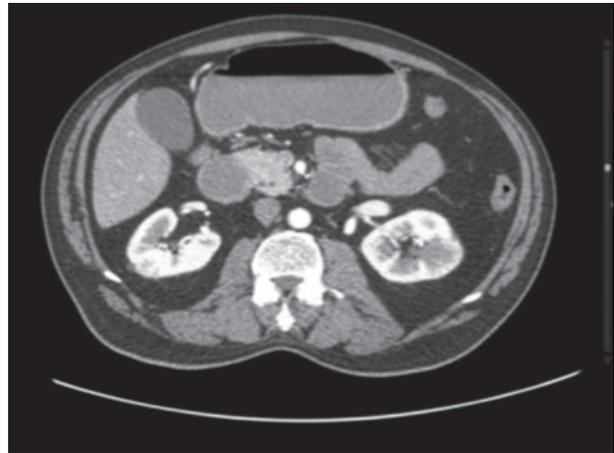
An internal hernia is a protrusion of abdominal viscera through a normal opening or defect in the peritoneum or mesentery. Internal hernias can be congenital or acquired<sup>1</sup>. True internal hernias can be further classified by their locations; para duodenal 53%, pericecal 13%, foramen of Winslow 8%, transmesenteric and trans mesocolic 8%, inter sigmoid 6%, retro anastomotic 5%<sup>2</sup>. Internal hernias are a rare cause of intestinal obstruction accounting for less than 2% and approximately 4% of obstruction caused by hernias<sup>1</sup>. Although para duodenal hernias are the most common type of congenital internal hernias and constitute around half of the cases; the incidence of para duodenal hernias are considered very rare<sup>1-5</sup>. However, with the increasing trend of bariatric surgeries, the incidence of acquired internal hernias are increasing<sup>1</sup>.

The aim of this report is to present a case of a para duodenal hernia, which was repaired with laparoscopic technique and had an uneventful recovery.

### THE CASE

A sixty-five-year-old Indian male, presented with a two-day history of multiple episodes of vomiting, associated with persistent nausea and no abdominal pain. Examination revealed soft, distended abdomen with no tenderness and audible bowel sounds. The patient was afebrile and vitally stable. Laboratory investigations revealed mild leukocytosis and elevated levels of urea and creatinine. The patient was managed with intravenous fluids and antibiotics. Patient's symptoms did not improve over the following two days. Abdominal ultrasonography revealed dilated stomach and duodenum that could be due to the superior mesenteric syndrome. CT scan revealed dilated stomach and duodenum up to DJ junction and transition zone at the site of Landzert fossa, see figures 1 and 2.

Laparoscopy revealed left para duodenal herniation of loops of jejunum through the fossa of Landzert with a malrotation of the midgut, as well as a small mesenteric lipoma. Herniated loops were reduced, and the defect was closed by Ticon suture. The patient was discharged the next day uneventfully see figures 3 to 5.

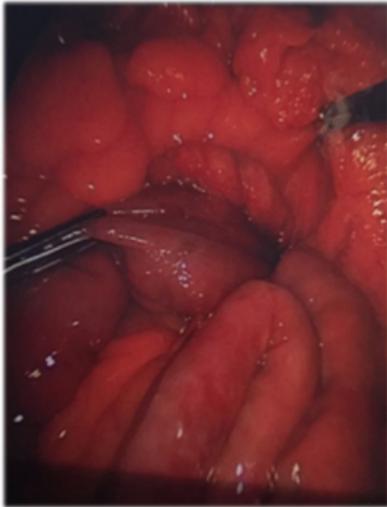


**Figure 1: CT Scan Showing Distended Stomach, Duodenum and Proximal Jejunal Loops with Collapse at the Site of Hernial Entrance (Landzert Fossa)**

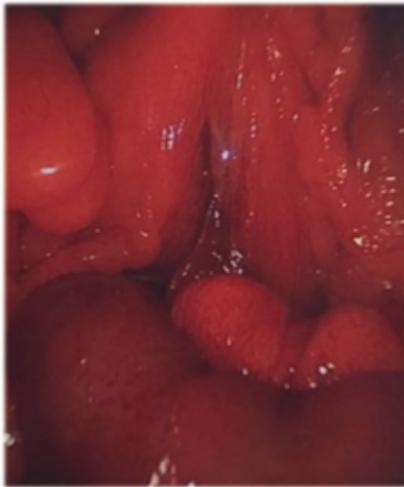


**Figure 2: Transverse Plane of CT Scan Showing Distended Stomach, Duodenum and Proximal Jejunal Loops with Vessel Engorgement around the Jejunal Loop**

\* Junior Surgical Resident  
\*\* Consultant and Advanced Laparoscopic Surgeon  
\*\*\* Junior Surgical Resident  
Department of General Surgery  
Salmaniya Medical Complex  
The Kingdom of Bahrain  
E-mail: dr.hamzamuneer@gmail.com



**Figure 3: Herniation of Jejunal Loops**



**Figure 4: Reduction of Hernial Content**



**Figure 5: Closure of the Defect through Landzert Fossa**

## DISCUSSION

Paraduodenal hernia is rarely diagnosed during autopsy, 0.2%–0.9%; it causes small bowel obstruction in less than 1%<sup>6</sup>. A paraduodenal hernia is sometimes called Treitz's hernia, named after Václav Treitz who described it in 1857<sup>3</sup>. More than 500 cases of paraduodenal hernia have been published in the

literature<sup>7</sup>. A paraduodenal hernia is a bowel herniation through a mesenteric defect with a hernial sac within the mesocolon into the Landzert fossa on the left side of the abdomen or Waldayer's fossa in the right side<sup>1</sup>. Landzert fossa is located on the lateral side of the third or fourth part of the duodenum to the left<sup>8,9</sup>.

Landzert fossa is a congenital defect found in 2% of people. During fetus development, the mesentery of the ascending, descending colon and duodenum become fixed to the posterior peritoneum and then retroperitonized. Abnormal fixation of the mesentery may lead to abnormal openings and bowel mobilization that could take part in the hernia formation. Therefore, the bowel invaginates into an avascular, unsupported segment of the left mesocolon. As a result, the small bowel becomes entrapped between the mesentery and the posterior abdominal wall<sup>10-12</sup>.

A left paraduodenal hernia is three times more common than a right paraduodenal hernia, with a male predilection; male-to-female ratio is 3:1. Different names of a paraduodenal hernia have been suggested and reported in the literature: hernia of the fossa of Landzert, Treitz a retroperitoneal hernia, mesentericoparietal hernia of Logace, hernia into the descending mesocolon of Callader<sup>9</sup>.

Most patients with a paraduodenal hernia are asymptomatic. The majority of cases are found incidentally. Symptoms of paraduodenal hernias are vague, diffuse and nonspecific, ranging between chronic intermittent partial obstruction to acute intestinal obstruction. Signs and symptoms may include postprandial emesis, chronic abdominal pain, nausea, vomiting, syncope, or a palpable mass upon examination if the hernia is large enough<sup>3,4,13</sup>. Age of presentation ranges from the fourth to sixth decades of life<sup>13</sup>. Regardless of the age of presentation, in a young patient with a history of chronic intermittent abdominal pain and unremarkable past surgical history, paraduodenal hernia should be included in the differential diagnosis<sup>9</sup>. Due to the lack of specific symptoms, scarcity of such cases and a reduction of a hernia spontaneously or after changing position at the time of imaging tests, preoperative diagnosis of paraduodenal hernias is very difficult, challenging, and almost never established clinically<sup>14</sup>. The risk of incarceration of a paraduodenal hernia is approximately 50%, and strangulation carries a high risk of morbidity and mortality rate up to 50%<sup>15,16</sup>. The jejunum is the most common herniated organ in the left paraduodenal hernia, which could explain the significant rate of mortality<sup>1</sup>.

The role of imaging studies is essential for the diagnosis of paraduodenal hernia. Although CT scan is the modality of choice, the scan is inconclusive in most cases due to the lack of exposure and experience of radiologists to deal with such type of hernia<sup>17</sup>.

The CT scan findings of bowel loops encapsulation at or above the ligament of Treitz may suggest the diagnosis of left paraduodenal hernia; usually a sac like mass is found either at the duodenojejunal junction between the pancreas and stomach to the left of the ligament of Treitz or between the transverse colon and the left adrenal gland. CT findings of a small bowel

obstruction are very common with dilated loops and air-fluid levels as in our case. The mass could affect and displace the adjacent structures. Mesenteric abnormalities, including vessel engorgement, or stretching are helpful keys.

In our patient, we have followed the basic surgical principles of hernial reduction and assessment of the hernial contents and correction of the defect primarily. In cases where a primary repair may not be feasible due to the defect or because of challenged hernial reduction, an alternative approach can be applied by widening the hernial orifice and dividing the inferior mesenteric vessels at the orifice<sup>5,17</sup>.

## CONCLUSION

**This is the first reported case in the Kingdom of Bahrain. The incidence of paraduodenal hernia is rare. Preoperative diagnosis of para duodenal hernia is very difficult and challenging which requires a high index of suspicion. The laparoscopic approach seems to be an excellent diagnostic and therapeutic modality. Surgical intervention must be considered whenever a paraduodenal hernia is suspected to avoid the risk of further life-threatening complications.**

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**Competing Interest:** None.

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**Ethical Approval:** Approved by the Department of General Surgery, Salmaniya Medical Complex, Bahrain.

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